

# NANOTECHNOLOGY

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Following on from genetic engineering, nanotechnology represents the latest high technology attempt to infiltrate our food supply. Senior scientists have warned that nanotechnology, the manipulation of matter at the scale of atoms and molecules, introduces serious new risks to human and environmental health.

Now, nanotechnology introduces a new wave of assaults on our foods. It further transforms the farm into an automated extension of the high technology factory production line, using patented products that will inevitably concentrate corporate control. It also introduces serious new risks for human health and the environment.

There are four key focus areas for nanotechnology food research:

## 1. Nano-modification of seed and fertilisers/ pesticides

Proponents say that nanotechnology will be used to further automate the modern agribusiness unit. All farm inputs — seeds, fertilisers, pesticides and labour — will become increasingly technologically modified.

## 2. Food ‘fortification’ and modification

Food ‘fortification’ will be used to increase the nutritional claims that can be made about a given processed food. Nanotechnology will also enable junk foods like ice cream and chocolate to be modified to reduce the amount of fats and sugars that the body can absorb.

## 3. Interactive ‘smart’ food

Companies such as Kraft and Nestlé are designing ‘smart’ foods that will interact with consumers to ‘personalise’ food, changing colour, flavour or nutrients on demand. ‘Smart’ packaging could release a dose of additional nutrients to those which it identifies as having

special dietary needs, for example calcium molecules to people suffering from osteoporosis.

#### 4. 'Smart' packaging and food tracking.

Nanotechnology will dramatically extend food shelf life. Mars Inc. already has a patent on an invisible, edible, nano wrapper which will envelope foods, preventing gas and moisture exchange. 'Smart' packaging is being developed that will be capable of detecting food spoilage and releasing nano-anti-microbes to extend food shelf life, enabling supermarkets to keep food for even greater periods before its sale.

What are the key concerns about nanotechnology in food and agriculture?

Nanotechnology in agriculture is based on the premise that we can improve efficiency and productivity by rearranging atoms in seeds, by developing even more potent chemical inputs, by using high technology surveillance to allow electronic, rather than person-based surveillance of on-farm conditions. Applications of nanotechnology to food processing assume that humans can 'improve' the taste, texture, appearance, nutritional content and longevity of food by manipulating it at the atomic level. It has even been

argued that this will result in food that is 'safer'.

The use of nano-surveillance in food packaging will also introduce new privacy concerns. As the food industry's use of nano-tracking increases, it will gain the capacity to track the movement of food from the paddock, to the factory, to the supermarket and to your dinner plate. This will raise serious new privacy issues for which we are poorly prepared.

The struggle for a healthy food future — what are the alternatives to nanotechnology?

A key way to promote healthy, holistic agriculture is to support it with our purchasing choices. Certified organic foods offer you better health, a better environment and a way for you to support a nano-free food future. It is exciting to see food politics debated by our mainstream media and our research and education

institutions. However while there are already unlabelled food products that contain engineered nano ingredients available in our supermarkets, nanotechnology is only just starting to gain some attention. We must all get politically active on nanotechnology just as we did with genetic engineering.

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